

# **THERMOGRAFIX** consulting corporation

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### **Texas Senate Meeting on Business & Commerce on Smart Meter Safety October 9, 2012**

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***“Bringing the Invisible to Light Since 1979”***

October 4, 2012

**Senate Committee on Business & Commerce  
Austin, Texas**

**Att: Senate Committee**

**Re: Health Impact of Smart Meters**

Dear Committee Members:

I want to thank you for tabling what might seem to be a controversial issue on health impacts of smart meters. It is important in the commissioning of independent reporting to have critical information represented. Independent reporting needs to incorporate a wide range of science professionals to deal with the scope of the wireless interaction. Universities or educational institutes come to mind because they have the scope of science professionals required in this very complex topic of frequency interaction.

It is important the committee members understand I am not a lobbyist nor do I represent any special interests. I am providing information in my capacity as a double credentialed science professional, temperature specialist and Adjunct Faculty for 2 medical education groups. Our objective work has even required consulting on national security issues after 9/11. Without being repetitive, our attached letter to the Lieutenant Governor will expand on provided information.

As you will see by supporting documentation critical information on smart meter safety was left out of the technical discussion and you can't leave out electrical information in an electrical equation. Electrical professionals are not medical professionals and medical/biology professionals are not electrical professionals. This requires the incorporation of all qualified professionals or individual professionals will be speaking outside their area of expertise.

**Difference Between Wired & Wireless Circuits**

Wired circuits are insulated circuits where we use copper or aluminum conductors inside **insulated** wires. The EMFs in wires run together cancel each other out and the power density is confined to the insulated wires. If wires are singular they have to be installed properly or the EMF at extremely low frequencies at 60 Hz can cause catastrophic electrical failure.  
[http://www.thermoguy.com/pdfs/Electrical\\_Frequency\\_Problem\\_in\\_Lumbermill.pdf](http://www.thermoguy.com/pdfs/Electrical_Frequency_Problem_in_Lumbermill.pdf)

Wireless circuits are using the airways and have to be used with care because they are uninsulated as well as everything they hit are in the circuit. Power density is the electrical load over the radiated area. Oncor's wireless circuit routers cover an average of 5 square miles and collectors cover an average of 125 square miles to communicate with smart meters. Instead of having insulated wires with power confined to the wire running to each home and meter, the wireless conductors are covering the 125 square miles per collector. Everything in the coverage area has a power density and is under electrical load, except not insulated for it.

## Missing Critical Science on Smart Meter Safety

The discussion on adverse health effects has been ongoing and it has always been dismissed due to extremely flawed science. (**Texas PUC Smart Meter Safety Sheet attached**) The FCC, IEEE, standards, testing, epidemiology treated the smart meter as the end use device only and didn't incorporate the rest of the wireless network communicating with the meter. Distance from the meter isn't keeping the resident safe when the routers and collectors are smothering large geographical areas to be able to communicate with the meters. The routers and collectors substantiate people are under electrical load hit from head to toe with high speed frequencies.

Safety testing for human exposure uses the Specific Absorption Rate which is an admission people are absorbing the energy. They developed limits of exposure without incorporating the electrical properties, frequencies and vulnerability of any biological systems. People were treated as meat heating and lower frequencies didn't heat the meat so were called non thermal effects.

Utilities can verify we generate electricity with electromagnetic induction and the electrical grid runs at 60 Hz. Electrical appliances in our homes run at 60 Hz for electrical compatibility, efficiency and safety. If the 60 Hz electrical grid was being induced by a foreign frequency, utilities would deal with it as an emergency or it could crash the grid and stop electricity flowing. When you mix frequencies you get a resultant frequency and the 60 Hz grid changing by a few Hz would produce serious electrical problems.

Human biological systems have millions or billions of frequencies and electrical considerations. The router and collector frequencies are electromagnetically inducing humans which crashes the human electrical grid. IEEE haven't been told frequencies were left out of a frequency equation and 900 Mhz is mixing with an 8 Hz brain wave as one example.

All frequencies and electrical properties have to be incorporated in these equations including angles that the frequencies hit moving biology. Literally all biology and living things within the coverage areas require representation. Here is a youtube video showing dead and dying vegetation associated with smart meter frequencies over coverage areas.

[http://youtu.be/lSuP\\_WBBR2c](http://youtu.be/lSuP_WBBR2c)

## Smart Meter Installation & Fires

Installing electrical meters on meter bases that have never been maintained since the original construction is very dangerous and requires licensed bonded electrical professionals. Unqualified installers changing meters under electrical load is dangerous to the home as well as the utility. Electrical professionals work with home owners and the utility to ensure the work is done safely, there is a reality meter bases require changing as well. (**see attached file**) Meter bases owned by home owners are being blamed for fires and electrical problems inside the building are being blamed on homeowners when the installation caused the problems.

Electrical professionals don't sneak on property or mass install meters without the proper safety considerations.

## **Real Energy Savings With Smart Meters**

I appreciate and respect the challenges today with power grids as well as monitoring use for energy savings but there are other considerations not discussed. Smart Meters are going to monitor energy consumption but not deal with massive energy waste.

Urban Heat Islands were thought to be warmer urban areas retaining heat, they weren't considered as the heat generators they are. Buildings are designed and insulated for specific regional temperature extremes. Their energy consumption for heating or cooling is calculated based on the regional temperature criteria. The problem is we couldn't see energy consumption.

In building development we are supposed to watch out for solar radiation and reflect or protect buildings or they get radiated by natural EMFs. In testing completed in 26 states and 7 provinces, we documented urban heat creation in the infrared spectrum. Los Angeles alone spends a reported 100 million per year responding to urban heat islands. Unfortunately they were responding to symptoms. Here are 2 infrared time-lapsed videos, one from outside the building and the other showing how people are cooked by their buildings.

<http://www.thermoguy.com/blog/index.php?itemid=86> Air conditioning is in fact refrigeration responding to the symptoms of the exterior being radiated by the sun. Here is a link showing building development approaching boiling temperature and each building using thousands of watts per hour of air conditioning reacting to symptoms.

<http://www.thermoguy.com/blog/index.php?itemid=88>

Smart meters aren't catching or eliminating this electrical waste while Texas buildings superheat the atmosphere changing climate with associated domino effects including droughts or fire severity. Paint, shade, white washing would eliminate the load on the grid immediately and stop the heat. Buildings have a function first before looks or community theme.

## **RF Exposure on Buildings & Infrastructure**

The smart meters are the end use device on the building, the routers and collectors are going to bath 100s of square miles to communicate with the meter. Buildings aren't designed for the frequency interaction and will be hit from top to bottom. Going through structures, fire separations will cause high speed vibrations at twice the speed of the frequencies. 900 Mhz will result in molecules changing direction 180 degrees 1.8 billion times per second and equates to molecular earthquakes. They will affect structural and fire integrity endangering the homeowners, firefighters as well as building code compliance with the municipality.

The frequencies covering 100s of square miles will induce electrical charges anywhere they can interact with material and a static release could cause fires or explosions in volatile areas. Accelerated corrosion of all infrastructure that the frequencies can interact with is also the reality. An opt out will not stop the coverage areas and protect people or their property.

## **Pollinators, Bees, Birds, Butterflies, Crops, Etc**

Wireless frequencies seem like such a savings but there are practical reasons we wire and construct development. The frequencies going through walls and people mean they go through all biology in the coverage areas. Bees, Birds and other life uses the earth's magnetic field for navigation, not electromagnetic fields pulsating millions or billions of times per second.

On top of causing adverse health effects, stimulating nerves, muscles, the high speed polarization of their molecules billions of times per second, electromagnetically inducing their electrical systems, we are affecting crops, trees and everything living.

Here is a link to mutated chicks after eggs were radiated.

<http://www.thermoguy.com/blog/index.php?itemid=94>

The dangers of the frequencies are now lectured in medical education for education credits required for licensing and recognized in 50 states. It isn't insurable or sustainable to randomly blast frequencies around with reckless abandon. The utility, PUC, state and across the board don't want the liability associated with the real damage. Technology upgrades are important but they need to be wired, it is the missed big economy. With the mechanisms known, the frequencies are illegal as applied.

Look forward to answering questions or challenges to the science provided.

Sincerely,

Curtis Bennett  
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Engineering Technologist  
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October 4, 2012

**Lieutenant Governor of Texas  
President of the Senate  
Austin, Texas**

**Att: David Dewhurst**

**Re: Wireless Smart Meter Frequencies Very Dangerous**

Dear David:

As part of the Expert Panel at the Texas Public Utilities Commission on Aug. 21, 2012 it is important I provide objective missing information in the discussion on Smart Meter safety. If President Obama spoke the truth on health costs bankrupting the US Government, implementing **wireless** smart meters will help achieve that.

The FCC and other international organizations adopted the Specific Absorption Rate(SAR) for determining wireless exposure. <http://www.ce-mag.com/archive/03/01/miller.html> A cell phone is attached to a model of a head with liquid poured into the top and a temperature probe inside the model. Wi-Fi is considered safer because the computer isn't held against the head and smart meters are considered safer because the meter isn't held against the head.

I have included a page in this document that is a Publication of the Public Utility Commission of Texas called Smart Meter Safety Sheet. You will see in the document that typical exposure distance for the smart meter is 10 feet and distance keeps people safe. The only reason they state that is because the smart meter is the end use device in the wireless circuit. In order for the wireless meter to function, it has to connect to the rest of the wireless access network.

Oncor's response to questions in **Responses to Questions from Public and Honeycutt 08-20-12 FINAL** state the average geographical coverage of their routers is 5 square miles and their collector's average coverage is 125 square miles. People within the coverage areas are not safe with distance from the meter, they are effectively in the wireless circuit and under electrical load. An opt out program would be useless because the people opting out are still in the area covered by the frequencies.

When you view the Texas PUC's Smart Meter Safety Sheet, you will read their admission through testing that people are absorbing the RF energy. They determined a watts/kilogram formula and a watts per square meter coverage which simply means they are under electrical load. Humans were considered as heating tissue and not intricate unprotected biological systems with their own electricity including frequencies. The FCC, IEEE, ANSI, FDA, NCRP, National Cancer Institute and all international bodies left out the electricity of biology.

As soon as you consider the wireless coverage and incorporate the vulnerability as well as the missing electrical information of biology, the frequencies are causing harm. The utility providers can substantiate that electromagnetic induction is how we generate electricity. Smart Meter frequencies are electromagnetically inducing human biological systems and inducing currents but biological systems already have their own electricity.

Health Canada's Safety Code 6, the same standards as the FCC states stimulation of tissue is to be avoided as is the heat effect. Radiation is confined to medical imaging in controlled environments. Experimental studies have shown it can lead to nerve and muscle stimulation plus much more. Incorporating the routers, collectors and electricity of humans validates the reporting of adverse health effects.

Due to the missing information being incorporated, the dangers of the frequencies is now lectured in medical education for education credits medical professionals require for licensing and applicable in all 50 states. There are very practical reasons we wire the world and confine EMFs to the wire. Pacemaker recipients are told to stay out of EMFs, the area coverage is taking the EMFs to their home.

Separate of the health effects, the area coverage to communicate with meters compromises everything living within the coverage areas as well as building compliance and infrastructure. The meters will not address the massive energy waste associated with air conditioning(refrigeration) reacting to the symptoms of Texas buildings being radiated by natural solar EMFs. <http://www.thermoguy.com/blog/index.php?itemid=88>

All of the above can be substantiated and we aren't lobbyists of any kind. We consult for oil, gas, energy, lumber, mines, insurers, fire services, governments, medicine, etc and have been cleared to consult on vulnerability after 9/11. The point is the required objectivity.

The great State of Texas, the utilities, municipalities, environment, health and across the board don't want the liability associated with the catastrophic damage or costs. Smart devices and technology upgrades are important, they need to be wired. It is the missed big economy.

Thank you for your work in bringing health impacts to the Senate Committee. Contact the writer with any questions.

Sincerely,

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Chief Science Officer  
Interprovincial Journeyman Electrician(Red Seal)  
Building Construction Engineering Technologist  
Adjunct Faculty, IHF & GEDI  
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# CUSTOMER FACTS

## Smart Meter Safety

Smart meters communicate energy consumption data to your electric utility provider through brief low-level radio frequency (RF) transmission signals that occur for one to two seconds. People are exposed daily to low levels of RF energy, from both natural sources, such as the sun, the earth and the earth's outer atmosphere, and from man-made sources, mainly telecommunications and common electronic devices.

These everyday devices typically cause significantly greater exposure for longer periods of time than smart meters, including cordless phone base stations and microwave ovens, which are usually positioned closer to the user. Additionally, RF exposure drops rapidly with distance.

In order to prevent serious health impact from exposure to RFs, the Federal Communications Commission (FCC), with the advice of the U.S. Food and Drug Administration (FDA) and other health and safety agencies, has set limits on power densities from electronic devices.

The smart meter, which is usually installed on the exterior of a building, such as a home, emits an occasional RF signal that is typically less than one-tenth of the FCC standard and is considered safe for everyday exposure.

To learn more about radio frequency technology and safety, visit the FCC website at: [www.fcc.gov/oet/rfsafety](http://www.fcc.gov/oet/rfsafety).

The acceptable FCC RF limits are 6.1 W/m<sup>2</sup> and 10 W/m<sup>2</sup> depending on frequency for continuous whole body exposure.



Cellular Telephone: 7.8 W/m<sup>2</sup> at 2" for 1-20 minutes\*



Bluetooth USB dongles: 0.042 W/m<sup>2</sup> at 4" for < 1 minute\*



Baby Monitor: 0.029 W/m<sup>2</sup> at 3'3" for 8 hours\*



Cordless Phone Base: 0.0052 W/m<sup>2</sup> at 3'3" for 1-30 mins\*



Microwave Ovens: 0.0043 W/m<sup>2</sup> at 3'3" for 1-10 mins\*



WiFi Base Station: 0.0021 W/m<sup>2</sup> at 3'3" for 10-60 mins.\*



Smart Meter: 0.0018 W/m<sup>2</sup> at 10' for 1-2 seconds\*

\*As illustrated, power density is measured in Watts per square meter (W/m<sup>2</sup>). The distances shown are for typical exposures.

### QUESTIONS:

Call: 1-888-782-8477, in Austin 512-936-7120 (TTY 512-936-7136) (FAX 512-936-7003)  
 Visit: [www.puc.state.tx.us](http://www.puc.state.tx.us)  
 Email: [customer@puc.state.tx.us](mailto:customer@puc.state.tx.us)

### COMPLAINTS:

Call: 1-888-782-8477, in Austin 512-936-7120 (TTY 512-936-7136) (FAX 512-936-7003)  
 Write: PUC - Customer Protection Division  
 P.O. Box 13326, Austin, TX 78711-3326  
 Online: <http://www.puc.state.tx.us/consumer/complaint/Complaint.aspx>





## Smart Meter Installations & Fires

While the next pages contain electrical information on important considerations swapping electrical meters, there are more considerations to address.

Smart Meters are wireless devices to read electrical consumption from remote locations. Smart Meter Fact Sheets states the meter base itself reflects the frequencies from the Smart Meter away from the residence and people are safe with distance. They are referring to the meter ONLY as an end use device. They are not incorporating the wireless network that makes the meter work.

The fact sheet left out the Smart Meter Routers, collectors, antennas that communicate with the meters. Those electromagnetic wavelengths are high speed frequencies hitting the building from top to bottom and going through the walls of the residence. Coverage can be 100s of sq. miles and every building in the coverage area is caught in the EMF.

The ramifications are high speed vibration of electrical systems, structural components, fire separations and electromagnetically inducing Pacemakers as well as electrical systems. That puts the building in violation of Building Code. High speed vibrations billions of times per second equates to molecular earthquakes.

Medical Services puts in Pacemakers and manufacturer's specifications tell the patient to stay out of an electromagnetic field. Utilities are taking the electromagnetic fields to the patient's home.

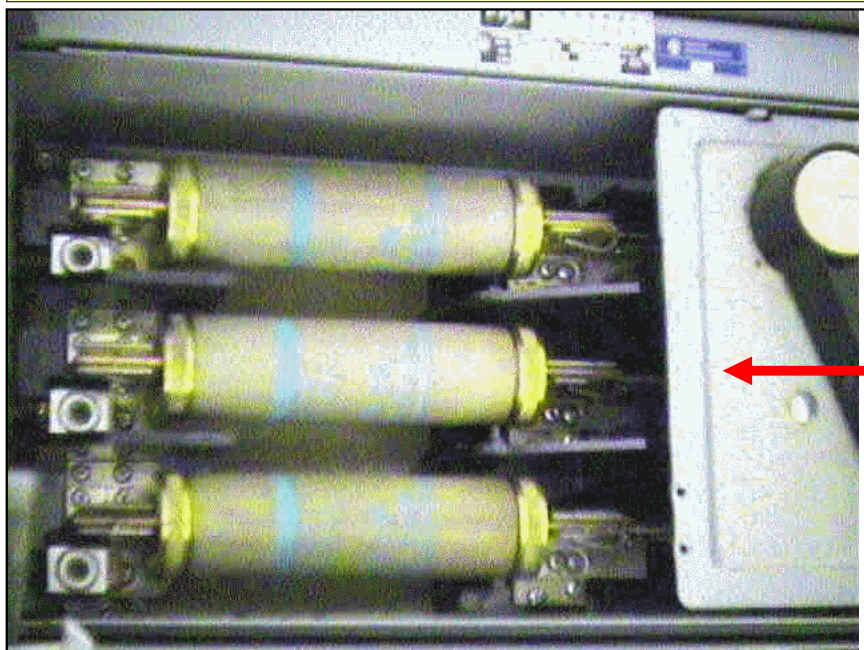
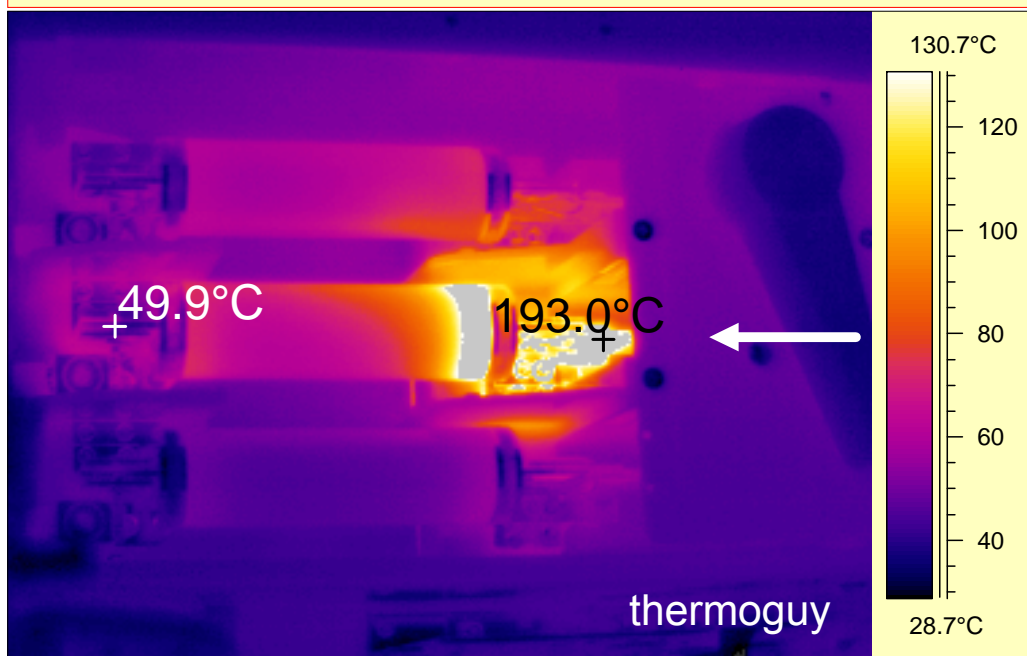
Our jobs as government trained electrical professionals are to report to the authority.

Sincerely,

Curtis Bennett  
Chief Science Officer  
Interprovincial Journeyman Electrician (Red Seal)  
Building Construction Engineering Technologist  
Adjunct Faculty  
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*"Bringing the invisible to light"*

## Stab Connection Example for Smart Meter Fires



Electrical failure of equipment can cause explosions, fire, injury, loss of life and insured loss including production losses for industry.

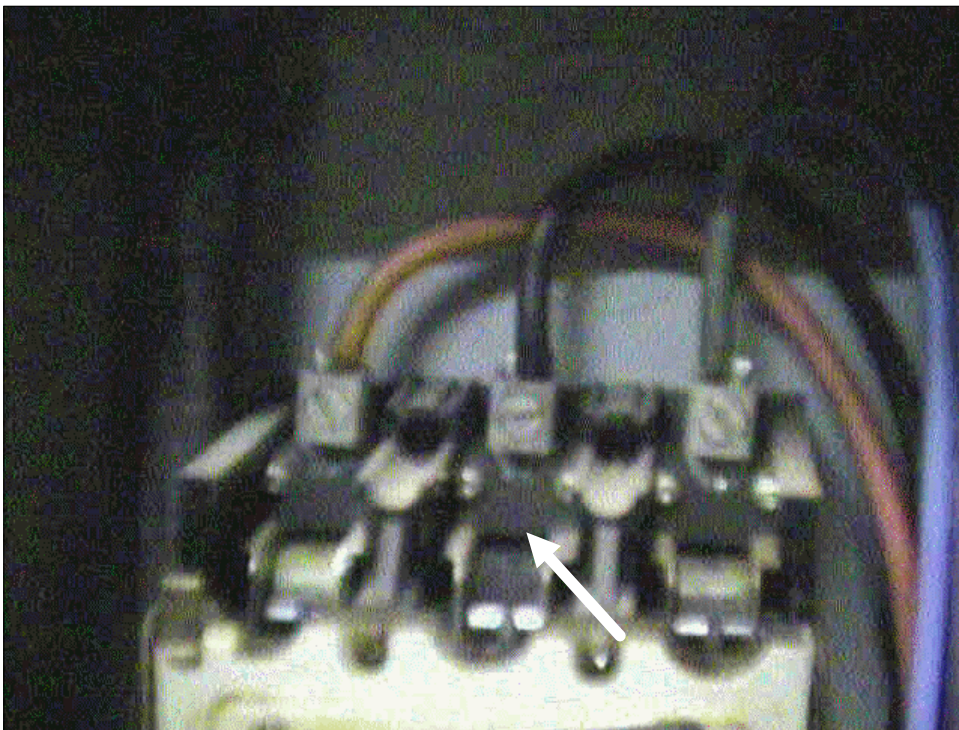
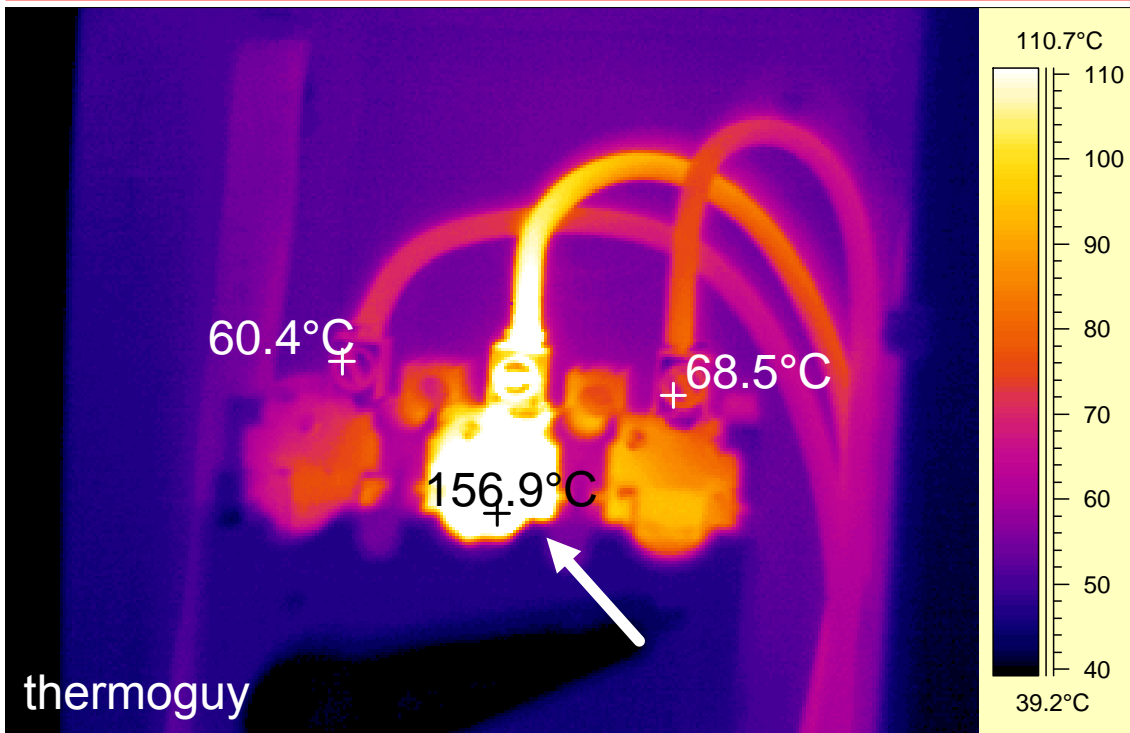
This is highlighting a loose or corroded **stab** connection in a fused disconnect. Stabs are used to connect the electrical meter to the meter base.

The arrows are highlighting the stab connection where the one side is 140 degrees C hotter than the other side because of the connection. As in a building with a Smart Meter, more electrical demand, more appliance use, AC use or devices plugged in accelerates electrical failure.

Look at the digital picture of the fused disconnect and to the untrained eye there appears to be no problem. That is the importance of qualified electrical professionals with required permits to install electrical meters.

For Hydro or any utility to blame homeowners or wiring for fires after meter installation is ridiculous when their installers aren't qualified to even understand the scope of work required.

## Wired Connections For Smart Meter Example



Electrical Meter Bases have wired connections as well as stabs. Qualified electrical professionals would check ALL connections when the meter is pulled. (safely and working with the home owner) Before installing the new meter any electrical problems would be identified and repaired, even replacing the meter based if required. There are no compromises electrically or there will be failure with consequences including fires.

In the electrical example above, a faulty wired connection welded in a closed position so they couldn't turn the switch off. It required changing the disconnect or there would have been electrical failure resulting in explosion, fire or both.

An unqualified professional wouldn't know how to address the problem. The arrow is highlighting discoloration associated with heat.